

WHAT IS CLAIMED IS:

1. A metal vapor discharge lamp comprising:  
a refractory and light-transmitting hermetic  
vessel;

5       a pair of electrode fixed to said hermetic vessel;  
a discharge medium sealed in the hermetic vessel,  
the discharge medium containing a halide, a rare gas  
and substantially disusing mercury; and  
most of light irradiated from the metal vapor  
10 discharge lamp having near-infrared wavelengths  
(750 - 1100 nm).

2. The metal vapor discharge lamp according to  
claim 1, wherein the halide contains a halide of at  
least one of potassium (K), cesium (Cs) and rubidium  
15 (Rb) which radiate light of near-infrared wavelengths  
(750 - 1100 nm).

3. The metal vapor discharge lamp according to  
claim 1, further comprising a visible-light blocking  
filter.

20       4. The metal vapor discharge lamp according to  
claim 1, wherein a wattage rating of the metal vapor  
discharge lamp is 100 W or less.

5. The metal vapor discharge lamp according to  
claim 1, wherein a distance between the pair of  
25 electrodes falls within a range of 1 mm to 6 mm.

6. A metal vapor discharge lamp comprising:  
a refractory and light-transmitting hermetic

vessel;

a pair of electrode fixed to said hermetic vessel;

a discharge medium sealed in the hermetic vessel,  
the discharge medium containing a first halide and a  
5 rare gas, the first halide containing a halide of at  
least one of sodium (Na), scandium (Sc) and a rare  
earth metal which radiate visible light (380 - 780 nm);  
and

a ratio of visible-radiation power (380 -780 nm)  
10 to near-infrared radiation power (750 - 1100 nm)  
falling within a range of 0.5 : 1 to 4.0 : 1, the  
visible-radiation power and the near-infrared radiation  
power being output when the metal vapor discharge lamp  
is in an ON state.

15 7. The metal vapor discharge lamp according to  
claim 6, wherein the discharge medium includes:

a second halide which generates a relatively high  
vapor pressure and being a halide of at least one metal  
which emits a visible light less than that emitted by  
20 the metal of the first halide;

a third halide containing a halide of at least one  
metal which radiates near-infrared light; and

the discharge medium substantially disusing  
mercury.

25 8. The metal vapor discharge lamp according to  
claim 6, wherein the discharge medium contains a halide  
of at least one of potassium (K), cesium (Cs) and

rubidium (Rb) which radiate light of near-infrared wavelengths (750 - 1100 nm).

5       9. The metal vapor discharge lamp according to claim 6, further comprising a visible-light blocking filter.

10       10. The metal vapor discharge lamp according to claim 6, wherein a wattage rating of the metal vapor discharge lamp is 100 W or less.

15       11. The metal vapor discharge lamp according to claim 6, wherein a distance between the pair of electrodes falls within a range of 1 mm to 6 mm.

20       12. The metal vapor discharge lamp according to claim 6, wherein the rare gas is Xe, Xe of five atoms or more being sealed in the hermetic vessel.

25       13. A projector comprising:  
a reflector;

a metal vapor discharge lamp as specified in any one of claims 1 to 12, the metal vapor discharge lamp being provided on the reflector; and

30       a light control member covering a front surface of the reflector.

35       14. The projector according to claim 13, wherein the projector is installed in a vehicle and used as a headlamp.

40       15. The projector according to claim 13, further comprising visible-light blocking means for blocking visible light and passing near-infrared light

therethrough in a high beam mode, and means for removing the visible-light blocking means from a radiation direction of the metal vapor discharge lamp in a low beam mode.

5           16. The projector according to claim 13, further comprising a visible-light blocking filter provided on at least one of front and rear surfaces of the light control member.

10           17. The projector according to claim 16, wherein the projector is installed in a vehicle and used as a headlamp.

15           18. The projector according to claim 17, wherein the visible-light blocking filter blocks visible light and passes near-infrared light therethrough in a high beam mode, and further comprising means for removing the visible-light blocking filter from a radiation direction of the metal vapor discharge lamp in a low beam mode.

20           19. A metal vapor discharge lamp lighting device comprising:

          a metal vapor discharge lamp as specified in any one of claims 1 to 12; and

25           a lighting circuit which supplies a current three times or more a rated lamp current after the metal vapor discharge lamp is lit, and reduces the current with a lapse of time.